DOCUMENT RESUME

ED 084 849 EM 011 670

TITLE	Computers and Teaching; An Interactive Newsletter. Number Five/Six.
INSTITUTION	Northwestern Univ., Evanston, Ill.
PUB DATE	May 73
NOTE	13p.; See also EM 011 666 through EM 011 069 and EM 011 671 and EM 011 672
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*Computer Assisted Instruction; *Computers; Course Evaluation; *Higher Education; *Man Machine Systems; Newsletters; *Teaching
IDENTIFIERS	CDC 6400 System; Computer Caravan; PLATO IV System; *Project Computer Aids to Teaching; State University of New York at Stony Brook

ABSTRACT

This conbined issue first gives descriptions of the PLATO terminal and of an interface which has been completed to allow them to be linked to the CDC 6400 system at Northwestern University. Details are next provided relating to four events; 1) an open house at the Computer Aids to Teaching Project; 2) the Computer Caravan, a traveling computer exhibit; 3) the summer 1973 workshop at the State University of New York at Stony Brook for computer resource personnel; and 4) the Festival of Educational Alternatives at De Paul University. Two new articles are presented, one on the evaluation of computer-assisted instruction and the other on community uses of interactive computers. Also included are reprints of several articles which appeared in earlier issues of the newsletter. (PB)

ED 084849

Computers And Teaching

An Interactive Newsletter

Northwestern University - Computer Aids to Teaching project

5/6
April May
1973

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"NEWS"

If you wondered where newsletter number 5 was (for April), worry no longer. It was lost by the printer. The artwork has now been redone and this special "double" issue will take the place of number 5. We have gotten so many requests for past newsletters, that we have completely run out; therefore, many of the previously published articles are being rerun in this issue.

PLATO

The PLATO terminal continues to function well in our workroom. Students seem to like the lessons (especially those which are "games" or simulations); but the introduction of PLATO into classes depends on faculty acceptance. We have had both good and bad luck so far with faculty; some faculty members have begun writing lessons for use in class, and have had some success with students from classes. But, there have been numerous comments indicating that what it will take to get large-scale involvement is the formal introduction of C.A.I. into a class. The C.A.I. will have to be formally required of students in order to make it successful. (I'm not sure how much I agree with this yet.)

In an attempt to get departments to formally accept PLATO (and C.A.I.) I would like to suggest that one or more of our terminals could be placed in department workrooms or offices next Fall, rather than in the School of Education workroom. Because of varying usage patterns, these could be hooked either to PLATO, or to our own CDC 6400. Our own computer would be used in cases where large simulations (or much computing power) were to be used. Departments which might be able to use one of the PLATO terminals may prepare a short outline of how they would officially use the terminal in course work (which courses, at which stages of the course, how would it fit in with material already in the course, how many students would be using the terminal, etc.) and submit it to us within the next month or two. We will try to make some decision in June - the decision will be made in such a way as to maximize the total usage of the terminals.

LINGO/HYPERTUTOR

Within the next two months an interface will have been completed allowing us to link the PLATO terminal(s) with the CDC 6400 at Northwestern. This does not provide a physical link between PLATO and our system, however, and authors will still have to negociate with PLATO authors for copies of their lessons. It does make it possible for authors to use full PLATO graphics capabilities on our own computer, and this should be a significant improvement over what we've already done. Because many of our authors are interested in applications which use more computer time than PLATO can give us, we must use our own computer.

Computer Aids to Teaching - 2003 Sheridan Road, Evanston, Illinois 60201
(administered by the Center for the Teaching Professions, and Vogelback Computing Center, Northwestern University)

EM 011 670

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WORKSHOP/OPENHOUSE

The combination Workshop/Openhouse which was scheduled for May has now been rescheduled to May 21-25th.

Demonstration sessions will be held each afternoon at 2pm and 4pm in room E1-316, School of Education, 2003 Sheridan Road, Evanston. There will be "live" demonstrations of PLATO and LINGO/HYPERTUTOR lessons, games and simulations at those times each day during the week.

Author sessions will be scheduled for groups of three or more individuals who wish to learn how to write their own lessons. These will last two to four hours, preferably in the mornings, and must be scheduled in advance by calling 492-5367. They will introduce potential "authors" to the TUTOR-IV language, and to the HYPERTUTOR system.

Summer workshops will be scheduled late this quarter - please advise us of preferred dates.

COMPUTER CARAVAN

Those of you interested in seeing new remote terminal equipment should always attend the Computer Caravan when it stops in Chicago. It's a traveling exhibit, with many small manufacturers represented.

Among other things, we found out by attending that Hazeltine has a new, small model (with smaller screen) which rents for much less than its large model, and Texas Instruments now sells Silent 700 terminals for about $1500 (additional $300 for coupler - unit not portable).

RESOURCE PERSONNEL WORKSHOP at S.U.N.Y. StonyBrook

We are still in need of Biology teachers from nearby high schools, to participate in the R.P.W. at StonyBrook this summer! All that's required is an interest in using the computer - no experience.

The basic purpose of the RPW is to train college and high school faculty in the classroom use of the Huntington Two simulations in biology and social studies. These participants will return to their home institutions and serve as resource people for colleagues at their own institution and at neighboring institutions.

BASIC DATA
Dates: July 9 - July 27, 1973
Place: SUNY at StonyBrook, Long Island
Stipend: $100 per week ($300 total)
Travel: round-trip economy airfare from home to LaGuardia
Living: $35 per week room allowance, $45 per week meal allowance
High School participants' obligations: 1) Utilizing the Huntington Two materials in your own classes (requires use of a PDP/8e computer or Northwestern's CDC 6400), 2) Organizing at least three awareness conferences (one afternoon each); one at your school, and two at neighboring districts, 3) If possible, organize a workshop for presentation at your local or state professional society.

Two Northwestern faculty members will be participating, and will be available thru the year to help the high school teachers with workshops. Schools without a PDP/8e may arrange with Northwestern to use the CDC 6400 (prices upon request) through a teletype/phone hookup.

Teachers interested in participating may contact Jim Schuyler (492-5367). We will try to construct a tightly knit group which can reassemble during the 73-74 school year for discussions and further workshops.

LAST MINUTE !!!

The microfiche projector for PLATO just arrived as I was typing this page. Any author (or potential author) who needs to display colored pictures along with computer-generated information should see us immediately about the potential of the fiche projector - we will have a slide made sometime this month, if there are enough potential users.

FESTIVAL

This weekend!! (I realize it's late to tell you about it, but it's good, so you should try to attend...) Festival of Educational Alternatives - at DePaul University Fullerton Campus, Fullerton and Seminary, Saturday May 12, :30am to 9pm and Sunday, May 13, 10am to 6pm.

The Festival is a "giant open classroom" at which people involved in all sorts of education will get together to talk over problems and to learn something new about the process of education.

(Registration fee of $1 to $5, depending on what you can afford.)

"TENTATIVE SCHEDULE"

May 12 (Saturdy morning) 10-12am
- *SURVIVAL TRAINING: Street Academies
- *BRAINSTORMING ON INTERDISCIPLINARY UNIT
- *SCHOOLS WITHOUT WALLS: High schools & colleges
- *DECENTRALIZATION & LOCAL CONTROL
- *COLLEGE ENTRANCE REQUIREMENTS
- *THAT READING BUSINESS: Individualizing
- *YELLOW PAGES OF LEARNING RESOURCES
- *SCIENCE IN A BOX: Whole Earth Perspective
- *FRIERE'S "PEDAGOGY OF THE OPPRESSED"
- *POETRY and WRITING
- *STATE LEGISLATION
- *POLITICAL ORGANIZING FOR CHANGE IN SCHOOL

May 12 (Saturdy afternoon) 1-3pm
- *LEGAL MANUAL FOR ALTERNATIVE SCHOOLS
- *MAKING CULTURAL DIFFERENCES COUNT
- *STUDENTS as TEACHERS
- *DESCHOOLING
- *TEACHER ACCOUNTABILITY/EVALUATION
- *VOUCHER SYSTEM
- *EVALUATION OF CHILDREN
- *HOW TO START YOUR OWN SCHOOL
- *WHAT IS A TEACHER: Roles and Rights
- *PEOPLE'S MATH
- *NON-HIERARCHICAL ADMINISTRATION

May 12 (Saturdy afternoon) 3-5pm
- *DAY CARE
- *ALTERNATIVE SCHOOLS AS OUTGROWTH OF RELIGIOUS COMMUNITIES
- *APPRENTICESHIP LEARNING
- *STUDENT TEACHERS/PARA-PROFESSIONALS
- *SURVIVAL KITS FOR SUBSTITUTES
- *BILINGUAL EDUCATION
- *STUDENTS' RIGHTS
- *ART MATERIALS
- *PARENTS IN THE SCHOOLS
- *DANCE
- *SEX ROLES IN THE SCHOOLS
- *FREE SCHOOLS AND PUBLIC SCHOOLS: How can they work together?

May 13 (Sundy morning) 10-12
- *WHAT DO OPEN CLASSROOMS CHANGE?
- *AFTER HIGH SCHOOL - WHAT?
- *USE OF VIDEOTAPE
- *NEW WAYS TO EVALUATE PROGRAMS
- *MOVING INTO THE COMMUNITY:Social Studies
- *KOZOL: For and Against
- *FEDERATION OF ALTERNATIVE SCHOOLS
- *UNDERGROUND NEWSPAPERS

May 13 (Sundy afternoon) 2-4pm
- *LOBBY TO CHANGE H.S. REQUIREMENTS & TEACHER CERTIFICATION
- *TRACKING: Inside & Outside classroom
- *SIMULATION GAMES
- *SCHOOL FINANCING

The C.A.T. project (us) will have a computer terminal at the Festival; we will be creating a Peoples' Data Bank, in which we will store your interests and try to match you with other people at the Festival with similar interests!

TRAVEL INFORMATION

Public Transportation:
Take the Howard St. Train (A or B); Get off at Fullerton and walk two blocks west.

By car:
Lake Shore Drive: Take the Fullerton exit and drive west.
Dan Ryan: Take the Fullerton exit and drive east.

FOOD

Everyone is requested to bring two lunches. One for yourself and one for someone who is without lunch. There are no plans for an evening meal, but there are plenty of restaurants in the neighborhood. Further information about them will be provided at the Festival.

(4.)

COTTAGE INDUSTRY

Some people think there will be a return to the home as the economic basis of our society by the end of this century.

As our economy moves more and more toward services and farther away from manufacturing, people find themselves doing tasks they could really be doing at home, if it were acceptable. Take programming a computer -- with time-sharing, the programmer could work from a back room, and could work any hour of the night or day. Or, if one felt the desire, it would be possible to set up neighborhood work-centers, where people gathered to do their work and drink coffee. Communication would be carried out on the telephone or picturephone. "Paper" based jobs would be carried out in conjunction with computer communication systems, in which the computer stored all information. Letters would be written by typing them into the computer -- then when the recipient signed-on, the letter would be printed on his terminal. A secretary could be located in Chicago for a boss in San Francisco; the secretary would handle communications and route letters via computer to the boss, who would dictate a reply. The reply would then be played back automatically when the secretary called the boss later in the day, typed into the computer and routed to the originator.

Is this a pipe dream? Perhaps not ! There are people in telephone companies today who look forward to the day when <u>all</u> calls will be included in the monthly charge. It would then be advantageous to work long-distance. The telephone network would hold your calls, record callers' numbers, route your calls to another number, or "camp" on a busy line. Once the computer has been connected to this network, just imagine the possibilities !

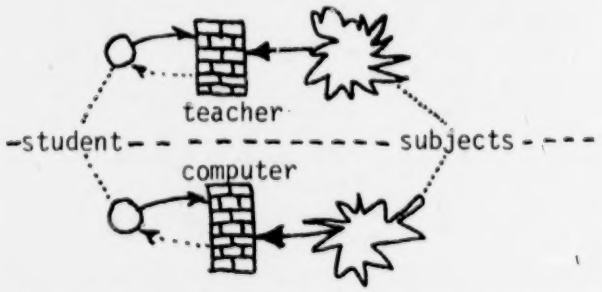
When PLATO-IV plasma-displays get down to $700 each (roughly the cost of a color TV console), people will begin to think of buying them for their families. Learning will take place in the evening, after school and during lunch breaks. The school may have to take on more socializing tasks -- teaching kids how to deal with each other and how to settle disputes. They may begin seriously trying to direct a student's inquiry, starting neighborhood study groups oriented toward solution of local problems. And the giant communication network may be used to form larger nationwide task-forces of people, communicating via the computer.

One of the first incursions into interactive computer controlled networks is the TICCIT (say "ticket") system, by MITRE Corporation. This is centered around a cable TV system in Reston, Virginia. The cable TV will be computer controlled, and will provide information and educational materials to citizens on their own television sets, as well as regular TV fare. Signals are sent to the individual TVs in the homes of children studying lessons, displaying information much like that PLATO-IV will display on its screens. The child presses a key on his telephone to respond. Eventually keyboards will be included. Shopping can be done the same way. Items are displayed on the screen, and buttons are pushed to order. Information of community interest can be displayed, and citizens can even vote on issues.

TICCIT is designed to be a local system, comprising a few hundred homes. Can you imagine what could be done on a truly large system such as PLATO-IV with thousands of homes ? It could change the structure of society.

HYPERTEXT

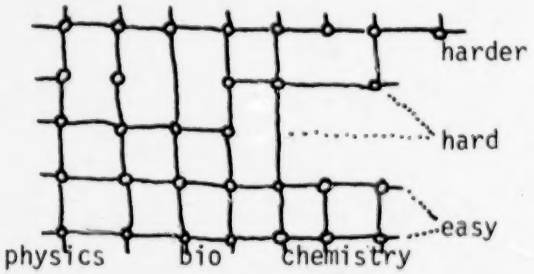
HYPERTEXT is a word coined by Theodor H. Nelson to describe his approach to Computer Aided Learning. A HYPERTEXT exceeds the bounds of conventional C.A.I. by putting the student in the driver's seat, contrary to normal practice...



According to Nelson, the trouble with C.A.I. is that it's too much like what we're trying to get away from -- it doesn't let the student freely explore the things which interest him. Instead it presents the "official" angle and its officially presented tie-ins. Both the regular classroom and CAI remove opportunities for initiative; they both bore the student, they give grades and narrow the curricula in order to produce "results".

In an ideal instructional system (a HYPER medium) "enthusiasm and involvement are what really count". The student is given an environment to explore, and is motivated only enough to get him started. Discrete (chunk style) HYPERTEXTS consist of separate pieces of text connected by links. Ordinary prose may appear on the screen and be moved forward or backward by throttle. An asterisk may indicate a connection with some other point in the hypertext (a connection found and tagged by the student usually). A HYPERGRAM or performing picture might explain how a motor works or show how the sine and cosine vary as an angle changes. A map might be projected, and the student may move it around, blow it up or make it smaller, at will. He might request additional overlays, such as population and climate. Or there might be queriable illustrations -- the student points at part of the picture and gets an explanation of its function.

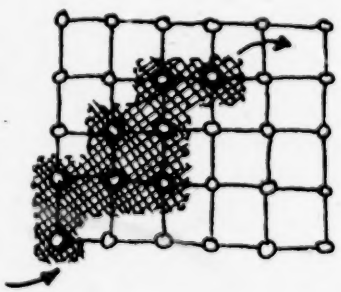
In HYPERTEXT, the student is in control! We could imagine a two-dimensional hypertext as a network of points with links between them (some links perhaps jumping around or between nodes).



In such a hypertext the student might "fly" above the lattice, looking at descriptions entered by authors of the lessons at various nodes (or at comments by students who had taken those lessons) and might then decide to "take" a particular lesson. If the material turned out to be too difficult, he would terminate the lesson and start "flying" to a "lower" node, where material presented would be less difficult. The columns of the network might contain related types of materials, varying in difficulty.

Other variations are, of course, possible!

Note that not only could the student change position in the network of lessons, but the lessons themselves could instruct the computer to switch lessons. This makes it possible for a student to enter a relatively simple lesson, learn more and be switched to progressively more difficult materials, and finally exit the lesson on a completely different level.



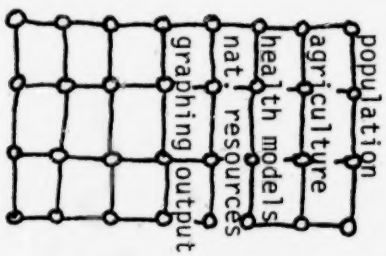
Of course, a HYPERTEXT doesn't have to be two-dimensional -- it's just easier to visualize it that way. As one finds more ways of describing educational materials, more dimensions may be added.

A personal dimension for instance -- in which the student may make personal connections between nodes in the network. All connections are remembered by the computer and displayed upon request, so the student can trace through previously recorded connections.

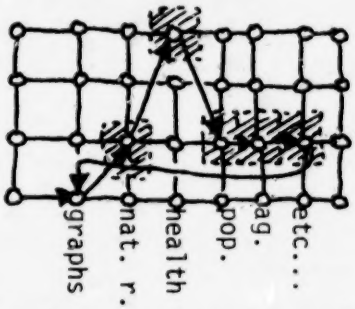
A "teacher" could create a small space within the larger HYPERspace, in which a group of students could work on a particular problem.

Dick Walz and I have thought about the problems of simulation in such a system as HYPERTEXT, and have created this model to guide further experimentation:

A simulation model (of the world, let's say) is created of a number of discrete parts, each of which is entered as a node in a section of the HYPERTEXT. A world model would be composed of population projections, food supply, natural resources, disease, etc. The student is given a choice of several pre-packaged models in each field, shown below.



Once the student has made a choice of model for each sub-section of the world model, a set of general input and output nodes is also chosen (to graph outputs, for instance). Then, the master-control node sets up system parameters and jumps to the first of the selected models. Each model computes the next projection (next time-period) and then jumps to the model in the next sector selected by the student. When all of the nodes have finished computing, the graphic output node is entered and a graph is produced on the student's screen. The student modifies assumptions, makes a different selection of models, and tries again until the desired effect is achieved.



What is unique about such a model? First of all, it provides the student with the chance to make a choice among many possible models. This is actually what a decision-maker or planner must do every day. Second, once the model has been chosen, it is possible for the student to revise that choice until a reasonable outcome is achieved. And finally, because the model is implemented within the HYPERTEXT, each node is accessible to programmers and may be easily changed or adjusted without throwing the whole model out of whack.

The various sectors of the model have access to each other's data, and to results of previous computations. In a conventional C.A.I. or other programming system it would be terribly difficult to establish such linkages among independent programs!

Note: Dick Walz and Leon Moses are now working on a simulation model in economics, for which such an approach may be taken. The model will be used on a PLATO terminal connected to Northwestern's CDC 6400 and the HYPERTEXT.

EVALUATION

How does one go about evaluating C.A.I. lessons?

There are several facets to evaluation in C.A.I. Foremost we must ask the question "does C.A.I. have anything unique to offer when compared with standard techniques?". The answer to this is definitely "yes" and "no". In terms of comparisons made between children receiving C.A.I. vs. standard classroom instruction, the results are ambiguous. In some studies the C.A.I. kids do better, in others they do worse, or they don't do significantly better or worse. It is "obvious" to all of us involved in C.A.I. work that for some strategies, such as simulation of a process, the computer is much better than classroom instruction, but it's hard to find studies in which simulations were used with children.

A secondary question in evaluation is, "which lessons are better?". This involves making comparisons between or among C.A.I. lessons themselves. In this area little work has been done. It is again obvious which lessons kids like better than others, but teachers are presumably talking about so-called objective differences between lessons, in the amount of learning each child gets from the lesson.

Additional questions which must be asked include the relative amount of work required of teachers and students for each possible teaching strategy -- i.e. does a classroom/lecture strategy require less work per student-hour than C.A.I.? The answer to this question is superficially "yes" -- when you look more deeply, if a lesson can be disseminated widely, it is indeed possible that one teacher could produce thousands of actual student-hours with a rather modest investment of his own time in return. The computer might make it possible to multiply a single teacher's effectiveness. (This is why the MITRE corporation's TICCIT system includes an "Instructional Development Factory" in which teams of experts produce lessons to be used by thousands of students.)

Evaluation of lessons in PLATO, or in a HYPERTUTOR system could be done using several mechanisms (as yet undeveloped).

a) A "peer" review system (suggested by Len Evens in our math department) would provide a board of experts in each subject area which would be charged with examining lessons entered on the system for factual accuracy and soundness of pedagogy. Lessons would be created by anyone, then submitted to this board at some time, where they would either be cleared for general use or sent back for revision. Because in many subject areas this might cause undue contention among warring factions, lessons should probably be allowed to stay on the computer system if they prove extremely popular as defined below.

b) A review system where actual users of lesson could "vote" and make criticisms of all lessons they take. Popular lessons would stay on the computer system; unpopular lessons probably would be candidates for deletion or might be relegated to "idle" status, accessible only when requested.

We are considering methods for constructing a type of evaluation or reporting system in the HYPERTEXT. Richard Fisher has built a lesson, EVALU, which allows an author to collect ratings and data from all users of a lesson -- this may someday be expanded into a larger type of evaluation lesson.

We have not yet dealt with the problem of evaluation of individual frames or units within a lesson -- this involves the recording of student response data and subsequent analysis to determine how well individual parts of a lesson function. We'll have more to say about this in later newsletters.

(8.)

PERSONALITY

Inanimate objects are frequently given a feminine or masculine personality, as when a ship is called "she" or a robot "he". In a C.A.I. lesson, an inanimate object (the computer) communicates with the student. During this communication the computer is constantly reacting to the student's response to each lesson question. This reaction raises the question "Does a student using a C.A.I. lesson attribute a personality to the computer?".

A deeper understanding of personality in relation to the computer is needed to answer this question. Each C.A.I. lesson has qualities that characterize and distinguish it from other C.A.I. lessons, so the computer possesses a quasi-personality in each lesson.

By itself, the dull computer has none of the qualities of charm, enthusiasm, anger, etc. The lesson author, however, has the ability to vary his lessons' responses to the students. He could, for example, add "personality" to his lesson by sending comments to the student like "Glad to see you again, Joe.", or "I think you could do a little better if you read Chapter 7, Joe."

The addition of this kind of "personality" is easy, but not frequently done. The pertinent question, it seems, is "Does the student really react better if the computer says personable things?".

An available lesson, GAME THEORY, attempts to add "personality" to its lesson structure. Basically it teaches the student how to play a certain game and then plays that game against the student. Each of the eight games it can play has some personality added to it. How about trying it? It will joke with you, and even attempt to make "deals" at appropriate moments. Just wait till you see what it does when you cheat and break the deal!

Games

One of the forms of learning which takes place in C.A.I. systems is called "gaming". The student plays a game with (or against) the computer, learning from his mistakes and successes. The GAME THEORY lesson teaches the student how to calculate strategies for simple two-person games.

The PASSWORD game (like the T.V. game Password) teaches new words and stretches your vocabulary. It does this beneath the guise of a "fun" lesson. In PASSWORD, the computer chooses a short word and gives you synonyms for that word. You have to guess the word it is holding.

Can you imagine playing SCRABBLE against the computer?

Lew H. Nathan

Lew Nathan, the author of these articles, is a graduate student in Computer Science. He has written several "fun" lessons in the TUTOR language, which are available on the CDC 6400 here at N.U. and will be available on PLATO-IV. Lew loves to talk to non-computer people about the computer, and can often be trapped in our workroom if you are lucky.

COMMUNITY

Recently we drafted a proposal called "Imaging Community uses of Interactive Computer Systems" -- this article is composed in part of ideas in that proposal, and some outgrowths.

To date there have been many kinds of interactive computer systems built in the United States. They have been used primarily for research and for business. Though commercial time-sharing has been available for a number of years, prohibitive costs have damped effective community use; the general public, and community organizations, just cannot afford the computer! In part, this is due to the fact that large corporations and governmental bodies can skim small amounts from the profit on each of millions of sales (or from taxes) and purchase lumps of computer power. Individuals cannot easily put together the 10¢ here and 5¢ there that goes to pay for computers when an item is purchased in the store.

What is apparently needed is the direction and motivation for the public to pull together its computer purchasing power to effectively use computer services.

The general population of the U.S. suffers from what Dick Walz calls the "Magic Machine" syndrome -- they think the computer can (and will) do everything. They fear automation, and the computer is the symbol of automation. They dislike the depersonalization we see everywhere, and what could be more impersonal than a computer-generated letter?

We are afraid there will be continued distrust of the computer unless a general education effort can be undertaken to change the attitudes of the public toward the uses of computers (which we all know can be quite positive!).

It is our desire, therefore, to introduce several segments of the Evanston community to some of the possible uses of computers in the future, and to provide an interaction between them and a group of educators, computer scientists and planners. The public will be shown some potential uses (on film or video tape) and will be asked for ratings of desirability, probability and for suggestions. They will gain experience by using a simulation model we will provide -- to run on a computer terminal located in a public place (like the public library?).

Feedback from the community will be recorded by the interactive computer system, and will be available to other community members both in aggregated forms (mean values, ranges, percentages, bar graphs, etc.) and as individual comments. The "experts" participating in the conference may make formal comments which the computer would send to community participants.

Some of the future uses which we will be able to explore will be the use of ORACLE-like lessons, in which several people participate in a "discussion" recorded by the computer, computer-aided-instruction, including information about TICCIT and PLATO, a Peoples' Data Bank, in which information about community members with special skills might be recorded, automation of the Learning Exchange idea where learners and teachers exchange knowledge and experience, etc. There are plenty of possibilities.

Using the simulation model we will try to find out what types of information and computer output are "useful" to community members, including politicians, planners, citizens, community groups, etc.

We would like your comments on this proposed program -- what community groups should we try to reach? Is it reasonable to expect people to react to fifteen minutes of film and a short interaction with the computer? What do you think?

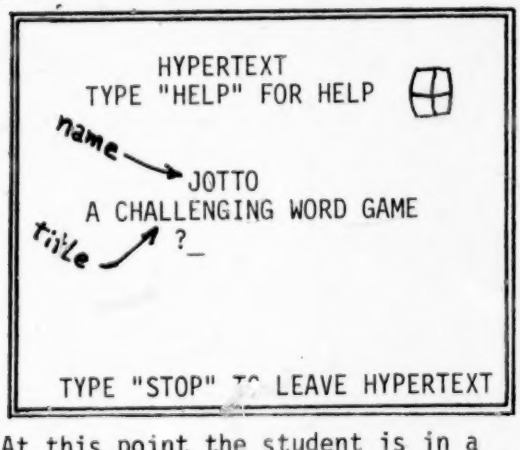
STUDENT'S GUIDE TO

HYPERTEXT

The LINGO/HYPERTUTOR interpreter is a permanent part of the LINGO CAI (Computer Aided Instruction) system. It accepts most of the TUTOR-IV (PLATO) language, and drives CRT, teletype or PLATO-IV terminals from a CDC 6400 at Northwestern University.

The student runs lessons by entering "CAI" as explained in TURNING IT ON, and then asking for HYPERTEXT.

Once in HYPERTEXT, the CRT screen is erased and "lesson pages" are displayed (example below)...



At this point the student is in a browsing mode, in which only the NAME and TITLE of each lesson appear. If the "CR" (carriage return) key is pressed (NEXT on PLATO-IV terminals), another lesson page will be displayed.

If a lesson title seems interesting, the student may type "MORE" to obtain AUTHOR, SUBJECT, STATUS or LEVEL.

To run a lesson, the student types "RUN" (or from any page, type the name of the lesson desired). To get out of the lesson and back to HYPERTEXT mode, the student types "#END" (the number-sign "#" is important). The lesson page will reappear and the student may continue browsing.

Because our initial HYPERTEXT is two-dimensional, the student may also type the words "UP", "DOWN", "RIGHT" or "LEFT", to go in the selected direction.

Some authors of lesson prefer to write experimental lessons and use them privately for a while before adding them to the public list of lessons. Private names all begin with an asterisk -- if your teacher supplies a lesson name which begins with an asterisk, be sure to include it in the name when you request the lesson.

A list of lesson names can be gotten by typing "LESSONS". No titles are displayed in this mode, and the student may continue browsing once the list has been completed.

AUTHOR'S GUIDE TO

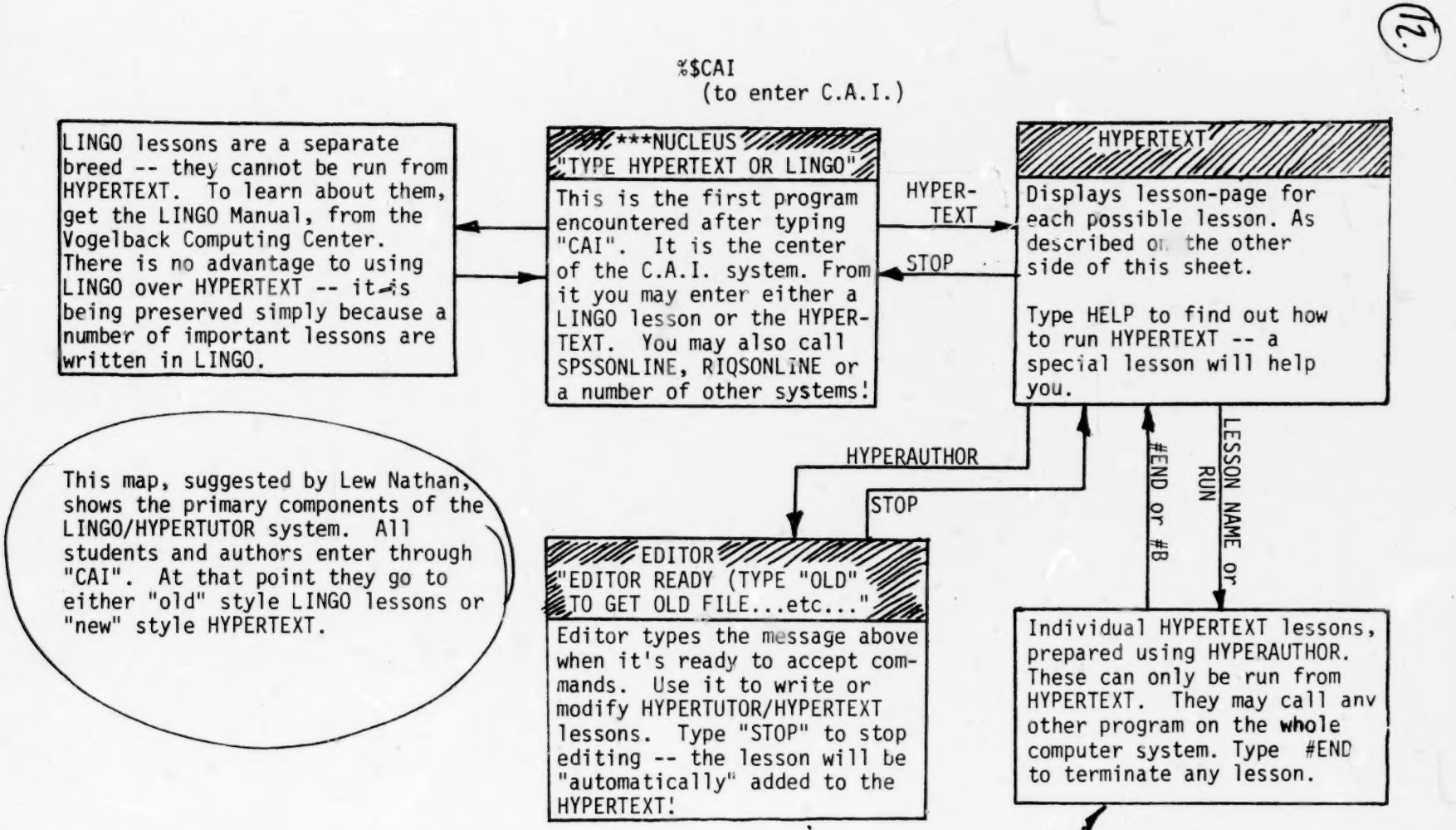
HYPERAUTHOR

A HYPERAUTHOR lesson is available from the HYPERTEXT, to make lesson-writing easier. Enter HYPERTEXT as if you were a student. Then type HYPERAUTHOR (a lesson name) and the EDITOR will be invoked. Because the editor doesn't know who you are, you must type the name of the lesson to be edited in an "OLD" command. Edit normally, then use the "NEW" command to preserve the new version of your lesson. Type "STOP" to leave the EDITOR and your lesson will be added to the HYPERTEXT. At this point you will be back in browsing mode in the HYPERTEXT. Type the name of your new lesson to run it. To make revisions, you simply re-enter HYPERAUTHOR, use OLD and NEW, and STOP to have the new version replace the old version of the lesson.

The COMPLETE GUIDE TO LINGO/HYPERTUTOR gives full instructions.

Commands in LINGO/HYPERTUTOR begin in column 1 of each line of text. Tags begin in column 11 (or after). The first command in your lesson must be NAME, followed in some order by TITLE, AUTHOR and SUBJECT. For example...

```
10.NAME       *SKY
15.TITLE      A PRIVATE LESSON
20.AUTHOR     JIM SCHUYLER  492-5367
25.SUBJECT    INTRODUCTION TO THE USE OF
30.           HYPERTUTOR
35.UNIT       ONE
40.WRITE      ...etc...
```


%$CAI
(to enter C.A.I.)
LINGO lessons are a separate breed -- they cannot be run from HYPERTEXT. To learn about them, get the LINGO Manual, from the Vogelback Computing Center. There is no advantage to using LINGO over HYPERTEXT -- it is being preserved simply because a number of important lessons are written in LINGO.
***NUCLEUS
"TYPE HYPERTEXT OR LINGO"
This is the first program encountered after typing "CAI". It is the center of the C.A.I. system. From it you may enter either a LINGO lesson or the HYPERTEXT. You may also call SPSSONLINE, RIQSONLINE or a number of other systems!
HYPER-TEXT
STOP
HYPERTEXT
Displays lesson-page for each possible lesson. As described on the other side of this sheet.
Type HELP to find out how to run HYPERTEXT -- a special lesson will help you.
HYPERAUTHOR
STOP
#END or #B
LESSON NAME or RUN
This map, suggested by Lew Nathan, shows the primary components of the LINGO/HYPERTUTOR system. All students and authors enter through "CAI". At that point they go to either "old" style LINGO lessons or "new" style HYPERTEXT.
EDITOR
"EDITOR READY (TYPE "OLD" TO GET OLD FILE...etc..."
Editor types the message above when it's ready to accept commands. Use it to write or modify HYPERTUTOR/HYPERTEXT lessons. Type "STOP" to stop editing -- the lesson will be "automatically" added to the HYPERTEXT!
Individual HYPERTEXT lessons, prepared using HYPERAUTHOR. These can only be run from HYPERTEXT. They may call anv other program on the whole computer system. Type #END to terminate any lesson.
When you type STOP to leave EDITOR, the lesson NAME, TITLE and other HYPERinfo are recorded permanently in the HYPERTEXT.

More information from
Computer Aids to Teaching (CAT)
Northwestern University
2003 Sheridan Rd., Evanston, Il 60201

From:

CAMPUS
MAIL

To:

CAT
2003 Sheridan Rd
Evanston Il. 60201

FEEDBACK: Write your comments here!

Articles:
- Workshop
- Computer Caravan
- RPW
- Festival
- Hypertext
- Evaluation
- Cottage Industry
- Turning it on
- Personality
- Community
- Learning Disabilities

TO ADD A NAME TO THE MAILING LIST: Speicfy "technical" or "ideas only". The technical list is for people using our system (includes "ideas" mailings too). The "ideas" list is for general outside distribution - people interested in the impact of computers on education and society in general.

(fold closed here and mail back to us with your comments. address on back)

FROM:
Computers And Teaching
Northwestern University
2003 Sheridan Road
Evanston IL 60201

TO: